Local Tsunami Education Plan Outline

Based on the drivers and the National Tsunami Education and Outreach Plan, this is what a local tsunami education plan may look like, to be adapted and adopted based on local resources and actions deemed appropriate for the area. This comes from recommendations and strategic plans from the NTHMP. This plan follows the outline as described in Dengler's (1998) Strategic Implementation Plan for Tsunami Mitigation Projects as well as the American Red Cross Community Disaster Education Guide (©1992, American National Red Cross) [not in print any more or on the web]. The author of this Plan wrote that Guide and is using its evergreen, non-proprietary content for this local Tsunami Education and Outreach Plan outline.

Step 1: Identify the Hazards

The primary hazard, tsunamis, is pre-defined. Additional related hazards must also be included: earthquakes, landslides, undersea volcanic eruptions, and asteroid strikes-at-sea. Hurricanes are a hazard whose effects on the ocean (hurricane storm surge, local inundation) are also related, but in a manner that its effects must be explained and separated from the behavior of the ocean by a tsunami.

Step 2. Develop a Community Profile

Note: For purposes of this Local Tsunami Education and Outreach Plan Outline, the word "community" may mean various things to different users. It may mean neighborhood, locality, borough, town, city, county, or state. Throughout this Local Plan Outline, the word "community" will be used to mean all of these.

A community profile will offer a general picture of the population makeup and the organizations that serve your community. This profile will be refined for specific target audiences, when they are determined later in the planning process.

The public is comprised of many audiences with diverse needs and interests. Understanding the makeup of your community will help you prioritize at-risk populations so that you will know whom to target immediately for information and education.

It is likely that a disaster-specific community profile has already been done, perhaps during a process of applying for and qualifying to receive TsunamiReady or StormReady status, as well as during development of comprehensive disaster response plans by the city, county, or state. Look for those resources to avoid re-inventing the wheel.

As this information is compiled, consider population clusters; socio-economic status; age; level of education; cultural diversity; and building types, sizes, and location. The profile should include information about the organizations and groups that serve the community, such as–

- Location of and populations served by schools, religious organizations, and community-based service organizations, such as community centers and health care providers.
- Population types and numbers served by organized groups.
- Location and nature of the business community and individual organizations.

- All media that serve the community, including radio, newspapers, magazines, television (direct, satellite, network, and cable), and internet-based media.

This information will be used later as you determine how to work with these organizations and groups to reach your target audiences.

Step 3: Identify Target Audiences

The drivers for a tsunami education plan suggest various audiences. The audiences were also identified during the discussion related to development of the Tsunami Education Assessment and follow-up with emergency managers at the state and local level, academic researchers (Dengler, Mileti), as well as National Weather Service Warning Coordination Meteorologists, NWS headquarters, regional, and field office staff, and at the Tsunami Warning Centers.

Merging the knowledge of your community tsunami risk with your community profile (Step 2) will help identify vulnerable areas of the community. *This is a vulnerability analysis.*

Disaster research shows that certain segments of the population face a greater risk from hazards because of their age, income, physical capabilities, limited English proficiency, geographic location, and other factors. For instance, some coastal areas (and its buildings) may be more vulnerable to the effects of a tsunami, and people with limited English proficiency may not receive important warning or preparedness information.

Audiences for tsunami education include:

A. Coastal Residents

B. Visitors to coastal areas

C. Service industry managers and employees (lodging staff, Visitor's Bureaus, Rental/Guest lodging arrangers, tour operators, etc.)

D. Media representatives (print, electronic, radio) whose service areas include coastal communities at risk for tsunamis

E. Emergency Managers, the Fire Service, Law Enforcement, and other first responders

F. Community-Based Organizations (CBOs) which may be emergent related to disaster issues, or long-term and may serve a different purpose (such as faith-based, or who work with persons whose primary language is not English, and Community Emergency Response Teams [CERT]).

G. Educators (school faculty and school leadership)

H. Elected Officials (State-level representatives, County Commissioners, City/Town/Borough Council members)

The local tsunami education plan leadership team needs to specify the priority for these audiences for tsunami education: where should efforts such as training, workshops, on-line resources, and outreach instruction and guidance be focused?

Research shows that the most effective local outreach and education plans focus on one or two target

audiences as a project each year, doing a good and thorough evaluation of the implementation, and adjusting the plan and perhaps expanding it to include additional audiences in subsequent years. Trying to reach every audience at once is impractical from a resources point-of-view, as well as perhaps so daunting that no part of the plan is executable.

A community's disaster plan (usually done at the city, county, and states levels) should contain an assessment of the potential impact of the hazards on the community (families affected, demographics with attention to special populations, impact on infrastructure such as roads, bridges, and utilities, etc.). Check your community's plan to see whether its analysis can be helpful to you.

Step 3 is designed to provide a rationale for whom to target with what information. But there are a few more steps go get through before determining the information needs of each audience. You can't reach them all (at once or altogether), so the next steps help you prioritize so you can target initial tsunami education activities toward the groups most vulnerable to the effects of tsunamis.

Step 4: Identify Current Tsunami Education Activities and Available Materials

What tsunami education is being done? What other disaster preparedness education is being done?

Disaster preparedness education – including education about tsunamis – is not new. It's also known as "community disaster education," "family disaster preparedness," "population protection," "human services," and "emergency education," as well as other names. The name is not important; the quality of the educational effort is.

There may be several groups, organizations, or individuals involved in various types of disaster education in your community right now. Before you proceed with your plan, find out who is doing it and what they are doing. You may be surprised at the number of people, organizations, and individuals already involved and who are doing tsunami-specific or related hazards education already.

N.B.: you may not need to develop anything further. That is, if disaster preparedness education is already being done for at-risk groups in your community, then perhaps all you need to do is to encourage leaders of those activities to adopt tsunami-specific messaging if it's not in their content already. Why make more work creating a new program if an existing program can be enhanced by your added collaboration with it?

What materials and resources are already available?

There are a number of locally- and nationally-developed materials in print, video, and electronic form that are available for tsunami education and outreach. Many of them were described in the Tsunami Education and Outreach Assessment. Techniques on selecting the appropriate materials with regard to content and delivery vary based on audience. Some techniques are useful and have a proven ROI, and some are a waste of time and resources. See the Assessment for further information.

There are also many tsunami-related videos on YouTube and other social media channels. Some are good, some are not. How do you determine the difference and which ones to use with an audience? You have to sit down and watch them, and listen carefully to the dialogue. If the dialogue describes appropriate behaviors, use it. If the dialogue shows inappropriate behaviors and the video takes a position of "don't do what you see," then do not use it. Research clearly shows that people remember visual messages far better and longer than verbal messages. If they see people doing the wrong

thing, they will remember that, and not the "do not do this" verbal overlay.

If in your review of available print, video, and electronic tsunami education materials, you determine that you must develop new materials (or update old materials), be certain to involve technical professionals as well as experienced communicators to review your work. The public does not recognize local, state, or federal jurisdictions. When nationally- and locally-developed materials are inconsistent, the public is understandably confused and may question the provider's credibility.

Example: "when the earth shakes violently, count to 20 and if the earth is still shaking, expect a tsunami. Get away from the coast and run uphill now!"

Alt. Example: "when the earth shakes violently, immediately drop, cover, and hold on to protect yourself. When the earth stops shaking and you're near the coast, a tsunami may come soon. Get away from the coast and go uphill now!"

An outcome of the National Tsunami Education Plan, based on the drivers, is to affirm accurate and current-day tsunami messaging in order to provide a public domain resources that local developers may use to craft local products. Tsunami Messaging will follow the steps recommended for it in the Assessment.

Step 5: Organize a Tsunami Education Team

It is ideal to have more than one person to rely on to do public outreach and education about tsunamis. One person cannot possibly reach everyone and every audience at risk, nor may have the skills (language) or time to reach them with the frequency and support that is required for a successful effort.

Begin by asking colleagues who has relationships with key groups or leaders. Assess how your organization now relates to the audiences being targeted. Include outreach to credible groups and individuals who can influence the people you want to reach. Tap informal networks of people who are important to your target audience.

Once that is done, seek the active participation of different segments of the community in planning and implementing your overall effort. Building coalitions with other organizations takes time, but it's worth it. Since other organizations in your community may share this goal–and no one organization can reach everyone–it's important to work together from the outset.

Step 6: Determine Where To Focus Outreach and Education Efforts

Now that you have determined priority target audiences (Step 3) and have reviewed ongoing tsunami education efforts (Step 4), you need to consider each audience's information needs. That is called "mapping content-to-audience." Every audience doesn't need the same information. In fact, some information is not pertinent or not actionable. Some information should be tailored for the audience's interests. For example, residents along coastlines want to know where the trouble spots are, but could probably care less about how the state's disaster response plan will be implemented. Emergency managers want to know both. Hotel operators want to know what liabilities they have and how to make informed decisions about informing their clientele without damaging their reputation or creating

averse risk (insurance liability).

It is important to involve leaders from your target audience to determine what key points are important to them. It is very hard for a responsible disaster preparedness educator to tailor content (that is, pare it down to the essential elements) because everything is important – to her or him. However, research is clear: limit messages to three key components. More than that, you'll lose the audience's interest and attention and your efforts will not be beneficial.

Further, you need to step back and ask, "who is not being reached and why?" Because there may be educational outreach activities already being done for certain groups, your choice now is to determine if those efforts should be evaluated and then continue to be supported or expanded – or change to a new approach by adding new educational outreach projects to reach other target audiences deemed to be at risk. This is a local choice, and everyone who has been and will be involved in disaster preparedness education in your community (Step 5) should be involved in the discussion. Hopefully, you can reach consensus on next steps.

When a decision has been made on the next steps to take, then write a clear goal with actionable, behaviorally-stated objectives. The objectives should be measurable, as any quality educational activity would be. The objectives are what you tailor your specific Local Tsunami Education Plan to meet through conducting actions that can be measured through evaluation.

Step 7: Determine Audience Information Needs

Now that you know your priority audiences and have written a Goal and Objectives for a Local Tsunami Education Plan, determine the specific information you should convey to your target audience(s).

Is the vulnerable population–

- Aware that the hazard is real?
- Aware of the nature of the risk for tsunamis: What may cause a tsunami? How long will it last? What's its potential severity? What impact will it have on them?
- Aware of warning terms and signals?
- Holding inaccurate beliefs or perceptions about the hazard?
- Dependent on technology that they need to function effectively?
- Motivated to be prepared ahead of time?
- Knowledgeable about appropriate safety precautions to take?

The answers to these questions will help identify the content and format of your tsunami education efforts. The goal is to get the right information to those who need it–not just to those who want it. Examine the barriers to conveying information to your target audiences. For instance, people in your target audience may–

- Not receive information through mass media (TV, radio, newspaper).
- Not have access to the Internet.
- Not understand the language in which the information is being conveyed.
- Not be able to read, or choose not to read for information.
- Not watch local television news or listen to local radio news programs.
- Not be able to interpret the meaning of a warning, even if they receive it.
- Have difficulty doing or be physically unable to do what is being advised.

- Hold beliefs about the nature of a tsunami and safety precautions derived from a different culture or life experience, making their beliefs irrelevant to the current situation.
- Have special concerns not addressed in warnings, such as the need for special medicines, equipment, or assistance if advised to evacuate.
- Not care, or not be motivated to respond.

What does each audience need to know? There are a variety of options, which should be selected and information tailored to each audience's information needs.

A. "Tsunami Basics"

- What causes a tsunami?
- What are essential vocabulary to understand about tsunamis?
- What's the difference between a near-source and a distant-source tsunami?
- Why don't all earthquakes cause a tsunami? ("Earthquake Basics" will help, explaining such things as the difference between a subduction fault and a strike-slip fault.)
- Can anything other than an earthquake cause a tsunami?
- What's the difference between a tsunami and a tidal wave?
- Can the effects of a tsunami be different at low tide and high tide?
- How much lead time (or warning) could we have for a tsunami?
- Can tsunamis be prevented?
- What are nature's cues for a near-source tsunami?
- How long a lead time would we have for a distant-source tsunami?
- Who monitors the possible development of a tsunami and projects impact, including wave heights and run-up?

B. What areas in my community are at risk?

C. What's the history of tsunamis for my area? What historical tsunamis have resulted in damage and deaths?

D. What is a tsunami inundation map, and how is the map interpreted?

- Are there different maps for different areas of my community?
- Where can I find the map(s) for my area?
- How do I explain the maps for those I serve/work with/care about?
- Will providing a map to a potential visitor or someone considering moving to my community scare them off?

E. What information is available about tsunamis?

- Printed materials
- Websites
- Signs (entering, leaving, instructional at beaches and shorelines)

F. What mitigation techniques are available for consideration?

- Physical mitigation techniques to reduce possible tsunami damage to a coastal home or business?
- Are there short-term mitigation techniques available for distant-source tsunamis? (i.e., will sandbagging work?)
- Are there physical options to build or construct to provide for people to get out of harm's way in the circumstances of great physical distances to reach high ground?

- What is the Return of Investment (ROI) for various mitigation techniques?

G. Why bother?

- Overcoming Stage 1 Denial: "it won't happen"
- Overcoming folklore (tsunamis never reach damaging heights here, or tsunamis only affect Alaska, Hawaii, and Crescent City, California)
- Overcoming Stage 2 Denial: "it won't happen here"
- Overcoming Stage 3 Denial: "if it does happen, it won't be that bad"
- Overcoming Stage 4 Denial: "if it does happen and it is that bad, there's nothing I can do about it anyway."

H. What do I do when…?

- I feel a strong earthquake?
- A tsunami siren sounds?
- I hear on the news that a tsunami is coming?
- I see the ocean behaving strangely (seawater receding and loud roaring?)
- Family members are separated when local officials advise evacuation for a tsunami?
- I want to take pictures/video of a rare event?

I. What does our community's Disaster Response Plan have in it about tsunamis?

- Does the response plan have anything in it related to preparedness, outreach, or education?
- Is the plan specific only for saving lives and property (i.e., response) only?
- Does the plan describe recovery efforts to be engaged?
- Do all community leaders, including elected officials, know about the plan?

Step 8. Identify Ways Target Audiences Receive Information

This step will help you determine the appropriate ways to reach your audiences. The community profile developed in Step 2 should be refined to get a detailed picture of the organizations, specific media, and opinion leaders for each target audience. Consider:

- Which media reach each target population?
- Which organizations and groups serve each target audience?
- What websites and social media does the target population regularly use, if any?
- Who are the opinion leaders and community "movers and shakers" who influence and represent each targeted population?
- Other influential people; for example, the head of the neighborhood association, faith-based groups, and other CBOs.

Step 9: Determine Activities and Approaches

What techniques are useful for communicating about tsunami risk with different audiences?

The methods selected to convey tsunami-related messaging to various audiences is dependent on several factors, and each audience requires different education techniques to be applied to reach them to effect positive behavior. The National Tsunami Education and Outreach Plan will provide

ideas and suggestions on:

- Techniques such as "town hall meetings," distributing printed materials, erecting and maintaining signs, printing inserts in telephone directories, doing door-to-door "leafletting," supporting school-based instruction, offering training for disaster management officials, appearing at county/city/town council meetings, etc.
- How do you reach coastal visitors?
- How do you work with and encourage collaboration among coastal service industry business and lodging operators and staff?
- What are media representatives looking for?
- How do you communicate about tsunamis with people whose primary language is not English?
- How do you explain to emergency managers how tsunamis fit into a community disaster plan, specifically, the mitigation and preparedness components?
- How do you explain to those accustomed to responding to an event how to encourage preparedness?
- Elected officials and how to enable making informed decisions (budget, resources, land-use planning, zoning, public health and welfare)
- Appeals to fear: do they work or not?
- Repetition and frequency of message
- Use of social media
- Use of websites
- Use of printed media

Step 10: Determine Cost and Resource Requirements

The resources required to conduct and implement a local tsunami education plan determine its extent. It's that simple. Most successful public education activities are successful because they leverage resources. Seldom, for example, would one local emergency management office be able to focus resources on tsunami outreach only. Successful activities will find ways to combine it with existing and multi-hazard outreach projects. A good example is how tsunami preparedness messaging is included in the "Great Shakeout" activities nationwide.

States that receive and pass-through money from the National Earthquake Hazard Reduction Program (NEHRP) as well as FEMA Community Preparedness grants may be providing support for training for Community Emergency Response Teams (CERT) and acquisition of materials (including educational materials.) While "FEMA doesn't do tsunamis" – they do "do" earthquakes, and a local tsunami is related to that. So leveraging existing resources through the use of grant funds supporting existing networks of trained volunteers is a great way to apply resources for multiple uses. That is, "get more bang for the buck."

Look at additional community-based resources, as well. For example, it is possible to include tsunami-specific information (maps, awareness and preparedness information) in a local community resource guide for new and current residents? Such a Guide is often prepared by local governments, real estate associations, and/or chambers of commerce. This Guide can include a spot announcement (in the form of a quarter-page ad, for example) where you can convey critical information.

Using the information in Step 8 and 9 (methods and means) where you have determined the approaches you want to take, it is important to "cost it out." That is, develop a budget. Will you require resources for purchasing existing educational materials or signs? Is it possible to leverage community good will by requesting a local business to pay for printing for you (perhaps in exchange

for an acknowledgment)? What percentage of your costs are related to direct purchases vis-a-vis indirect (in-kind, donated, or leveraged) services? Most successful public education and outreach efforts use a combined approach, and find ways to extend their extremely limited financial resources by two or three times (or more) through creative financing and "getting help from some friends."

Step 11: Implement the Plan

Implementation of a local tsunami education plan should be approached in small steps. Often, one begins with a pilot effort. A pilot identifies a limited target audience and uses the technique(s) for education selected to conduct it. Then an evaluation (see Step 12) follows. The plan may require adjusting or modification based on the results of the pilot.

Throughout all implementation activities, it is important to keep documentation–

- about the amount of physical resources consumed or used (i.e., brochures distributed, signs placed, or budget expended)
- value of in-kind support (such as free use of a meeting room that other groups would be charged to use, donation of printing, volunteers, etc.)
- compute and record hours contributed by volunteers. This is a measurement step that is often missed. Time contributed by those paid to do it (Project Staff) as well as volunteers has value, and keeping a log of the amount of time that the Program Manager applies to the effort, along with dedicated resources such as CERT volunteers and collaborative efforts from allied CBOs, can be used to defend and support future budget decision-making by Management and elected officials. A website by the Independent Sector assists in determining the value of a volunteer's time.

Step 12: Evaluate Tsunami Outreach and Education Efforts

There are a variety of ways to evaluate how a local tsunami education plan is working. The National Tsunami Education and Outreach Plan will provide examples and templates of various methods that have been used, along with information about their pros and cons. Not all evaluation methods are the same, or provide information that is useful – especially when tasked to determine a Return of Investment (ROI) which is frequently done these days at the local level (this may be called "zero-based budgeting.")

Evaluation is a critical tool and often is not used because some consider it daunting to do well, expensive, and time-consuming. But without knowing results of your activities, how do you know that you are accomplishing your education plan's objectives?

The following evaluation tools are helpful for disaster preparedness education activities:

- Surveymonkey – online, free tool to conduct anonymous surveys and provide feedback on outreach activities.
- Asking open-ended questions, such as "state three things you learned today."
- Evaluating across objectives, such as "objective #1 said that you will be able to describe nature's cues of a tsunami. List them."
- Conducting interviews through Focus Groups or telephone polls (expensive, time-consuming, and may be prohibited for governments to do, but it's worth a mention)

Step 13: Revolve Evaluation Results into Refining the Local Plan

Any "living" Local Tsunami Education and Outreach Plan will cycle back to at least Step 6: determining priorities based on evaluation of current activities and priority target audiences. As projects mature, the information needs of the audiences may (or may not) change. For example, local residents may be well-aware of the risk and know how they will be warned and what to do when a tsunami warning is given (or cues from nature are noticed). But they may not know about changes to local tsunami inundation maps, installation of new tsunami sirens, or changes to roads and topography that may affect their ability to get to a designated assembly area in time.

Some programs and projects may need to be repeated often. Visitors to beaches are often not the same people year after year. Staff at local lodging and service industries often turns over on a frequent basis. Education and outreach to them may need to be repeated frequently, and consist of the same information year after year. That's okay – that's their need.

The vast majority of disaster preparedness education activities are pretty good about handing out "stuff" to "likely suspects," but seldom evaluate their work and know if their efforts will produce meaningful results when disaster strikes. Further, disaster research clearly indicates that disaster preparedness information needs to be provided over and over again such as to inspire community conversation about it. When people talk about it, they more likely internalize the messages and do something with it. In addition, drills and exercises play a role, too. Practicing where to go when the siren sounds, or how to "drop, cover, and hold on" when the earth shakes, has been proven to be effective in causing behavior change. That is the primary purpose of disaster preparedness education, anyway. Lives are saved, injuries are reduced, and property damage is minimized when people know what to do – and do it.

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Last update: **2018/06/13 08:39**